

Double Acting Piston Seals DSE Style

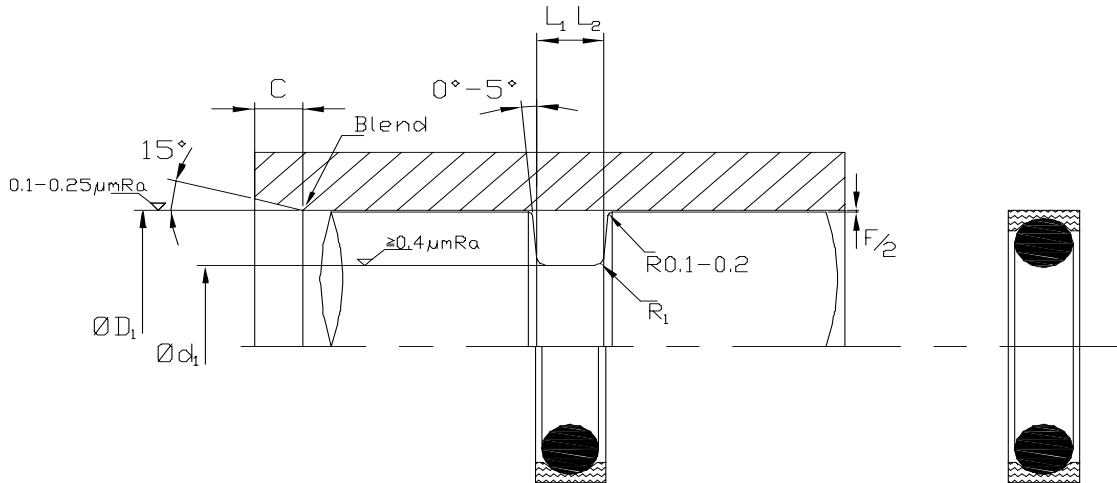


Design

Claron Style DSE Cap Seals are designed as a Double-Acting Piston seal to increase the service life of a product where O-Ring housing designs are in use in more demanding applications. Where the requirements are for lower friction, reduced extrusion, higher operating speeds or increased service life, the DSE style seal can be utilised without any modification to the existing O-Ring grooves. The range is available in both Metric and Imperial size ranges to suit standard BS1806 O-Rings, and BS5106 housing grooves and also for use with housings currently utilising one Back-up Ring. See table for recommended housing dimensions.

Materials

Standard materials are VM (Modified Virgin PTFE), C (Carbon filled PTFE) or B (Bronze filled PTFE) with Nitrile O-Rings, but a wide range of high performance materials are also available to suit a variety of applications. The application parameters should be carefully considered prior to selecting suitable materials in Appendix 2. Please consult Claron for further advice.



Operating Range, dependant upon Sleeve and O-Ring Material

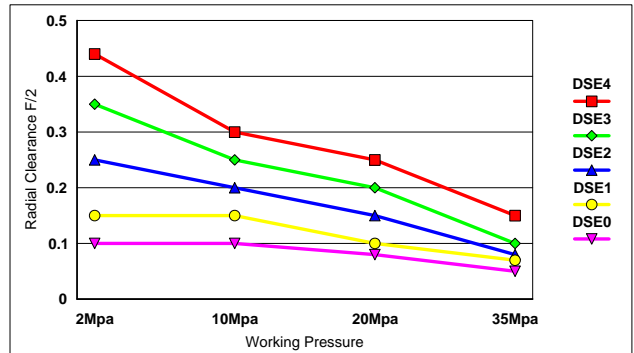
Temperature -40°C to 200°C

Pressure upto 350 bar (5000psi)

Velocity - Reciprocating upto 5m/s, Oscillating upto 15m/s

These range parameters are maximum conditional values. Optimum service conditions are affected by temperature, speed, pressure, surface finish and extrusion gaps. Continuous working temperatures over 130°C may reduce service life of seal.

Refer to Appendix 1 for further information or contact Claron.



Operating Conditions

Maximum simultaneous working conditions for 'Standard' applications using specified tolerances.

Bronze PTFE/Nitrile Temp Range -30°C to 80°C, Pressure Max 350bar (5000psi)

Carbon PTFE/Nitrile Temp Range -30°C to 80°C, Pressure Max 250bar (3600psi)

Modified PTFE/Nitrile Temp Range -30°C to 80°C, Pressure Max 200bar (2900psi)

For other conditions refer to Appendix 1 and 2 in the main catalogue.

Fitting

For the seal to function correctly, it is important that care be taken in fitting the seal within it's housing. For a detailed checklist, refer to Appendix 3 in the Claron catalogue.

BS1806 Imperial O-Ring Range

	Standard Range	Extended Range
DSE/0/	8 - 13.9 (5/16 - 9/16)	8 - 38 (5/16 - 1,1/2)
DSE/1/	14 - 24.9 (1/2 - 15/16)	9 - 80 (3/8 - 3,1/8)
DSE/2/	25 - 45.9 (1 - 1,13/16)	12 - 255 (1/2 - 10)
DSE/3/	46 - 124.9 (1,7/8 - 4,7/8)	22 - 417 (7/8 - 16,3/8)
DSE/4/	125 - 500 (5 - 20)	80 - 500 (3,1/8 - 20)

Double Acting Piston Seals DSE Style

Table of Standard sizes using BS1806 O-Ring Grooves

Imperial Range			Metric Range			d1		L1	For 1 B/UP width L2		R1	C	O-Ring
Series Ref.	Size Ref.	Bore Dia Tol. H9	Series Ref.	Size Ref.	Bore Dia Tol. H9	Groove Dia. Tol. h9	Groove Width +0.2 -0	Groove Width +0.2 -0	Rad. Max.	Chmfr Min	Max.	Min	Sect.
DSE/0/	0079	5/16	DSE/0/	0080	8	D1 - 2.9mm	2.4	3.8	0.4	2.6	0.070"	(1.78mm)	
	0095	3/8		0090	9	D1 - 2.9mm	2.4	3.8	0.4	2.6	0.070"	(1.78mm)	
	0111	7/16		0100	10	D1 - 2.9mm	2.4	3.8	0.4	2.6	0.070"	(1.78mm)	
	0127	1/2		0110	11	D1 - 2.9mm	2.4	3.8	0.4	2.6	0.070"	(1.78mm)	
	0143	9/16		0120	12	D1 - 2.9mm	2.4	3.8	0.4	2.6	0.070"	(1.78mm)	
				0130	13	D1 - 2.9mm	2.4	3.8	0.4	2.6	0.070"	(1.78mm)	
DSE/1/	0158	5/8	DSE/1/	0140	14	D1 - 4.5mm	3.6	4.65	0.4	3.3	0.103"	(2.62mm)	
	0174	11/16		0150	15	D1 - 4.5mm	3.6	4.65	0.4	3.3	0.103"	(2.62mm)	
	0191	3/4		0160	16	D1 - 4.5mm	3.6	4.65	0.4	3.3	0.103"	(2.62mm)	
	0206	13/16		0180	18	D1 - 4.5mm	3.6	4.65	0.4	3.3	0.103"	(2.62mm)	
	0222	7/8		0200	20	D1 - 4.5mm	3.6	4.65	0.4	3.3	0.103"	(2.62mm)	
	0238	15/16		0220	22	D1 - 4.5mm	3.6	4.65	0.4	3.3	0.103"	(2.62mm)	
				0240	24	D1 - 4.5mm	3.6	4.65	0.4	3.3	0.103"	(2.62mm)	
DSE/2/	0254	1	DSE/2/	0250	25	D1 - 6.2mm	4.8	5.7	0.6	4.5	0.139"	(3.53mm)	
	0286	1 1/8		0270	27	D1 - 6.2mm	4.8	5.7	0.6	4.5	0.139"	(3.53mm)	
	0318	1 1/4		0280	28	D1 - 6.2mm	4.8	5.7	0.6	4.5	0.139"	(3.53mm)	
	0349	1 3/8		0300	30	D1 - 6.2mm	4.8	5.7	0.6	4.5	0.139"	(3.53mm)	
	0381	1 1/2		0320	32	D1 - 6.2mm	4.8	5.7	0.6	4.5	0.139"	(3.53mm)	
	0413	1 5/8		0400	40	D1 - 6.2mm	4.8	5.7	0.6	4.5	0.139"	(3.53mm)	
	0445	1 3/4		0420	42	D1 - 6.2mm	4.8	5.7	0.6	4.5	0.139"	(3.53mm)	
	0460	1 13/16		0450	45	D1 - 6.2mm	4.8	5.7	0.6	4.5	0.139"	(3.53mm)	
DSE/3/	0476	1 7/8	DSE/3/	0480	48	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0508	2		0500	50	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0540	2 1/8		0520	52	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0572	2 1/4		0550	55	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0603	2 3/8		0560	56	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0635	2 1/2		0600	60	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0667	2 5/8		0630	63	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0730	2 7/8		0650	65	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0762	3		0700	70	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0794	3 1/8		0750	75	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0825	3 1/4		0800	80	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0857	3 3/8		0850	85	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0889	3 1/2		0900	90	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0920	3 5/8		0950	95	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0950	3 3/4		1000	100	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	0980	3 7/8		1100	110	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	1016	4		1150	115	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	1079	4 1/4		1200	120	D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	1143	4 1/2				D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
	1206	4 3/4				D1 - 9.4mm	7.1	8.5	0.8	6.0	0.210"	(5.34mm)	
DSE/4/	1270	5	DSE/4/	1250	125	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
	1333	5 1/4		1300	130	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
	1400	5 1/2		1350	135	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
	1460	5 3/4		1400	140	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
	1524	6		1500	150	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
	1650	6 1/2		1600	160	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
	1778	7		1700	170	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
	1905	7 1/2		1800	180	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
	2032	8		1900	190	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
	2159	8 1/2		2000	200	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
	2286	9		2100	210	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
	2413	9 1/2		2200	220	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
	2540	10		2300	230	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
				2400	240	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
				2500	250	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
				3000	300	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
				3200	320	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
				3500	350	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
				4000	400	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
				4200	420	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
				4500	450	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
				4800	480	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	
				5000	500	D1 - 12.2mm	9.5	11.2	0.8	7.5	0.275"	(6.99mm)	

convert to metric equiv.

All intermediate sizes within the BS1806 range can be supplied within the extended range of sizes listed. e.g. 5" Bore using 0.210" sect. groove. order as DSE/3/1270/VM etc. If in doubt Consult Claron for Reference No.

ITEMS IN BOLD CONFORM TO ISO 3320 HOUSING RECOMMENDATIONS

How to order within BS1806 Range

Style	Series	4 digit Size Ref.	PTFE Mat'l Code
DSE/	3/	0950/	C
DSE/	1/	0158/	VM
DSE/	1/	0158/2/	VM

95 mm Bore Material Carbon PTFE / Nitrile O-Ring
0.625" Bore Mat'l Virgin Modified PTFE / Nitrile O-Ring
0.625" Bore Mat'l Virgin Modified PTFE / Nitrile O-Ring using L2 groove

Range of sizes using BS5106 O-Ring Grooves

Series Ref.	Range of Sizes	D1 Bore Size Nom.	d1 Groove Dia. Tol. h9	L1 Groove Width +0.2 -0	R1 Rad. Max.	C Chmfr Min	O-Ring Sect.
DSE/24	8-74 mm		D1 - 4.1mm	3.2	0.5	2.2	2.4mm
DSE/30	25-255 mm		D1 - 5.2mm	4	1	2.6	3.0mm
DSE/57	55-510 mm		D1 - 10.0mm	7.2	1	3.7	5.7mm

How to order within BS5106 Range

Style	Series	4 digit Size Ref.	PTFE Mat'l Code
DSE/	24/	0700/	C
DSE/	30/	0700/	C